

Teaming up with the value chain: How innovations from chemical industry can support the carbon neutrality targets.

Dr. Katharina Schlegel

Global Market Development Biopolymers

BASF

Ludwigshafen am Rhein, 9/27/2021

Introduction to BASF



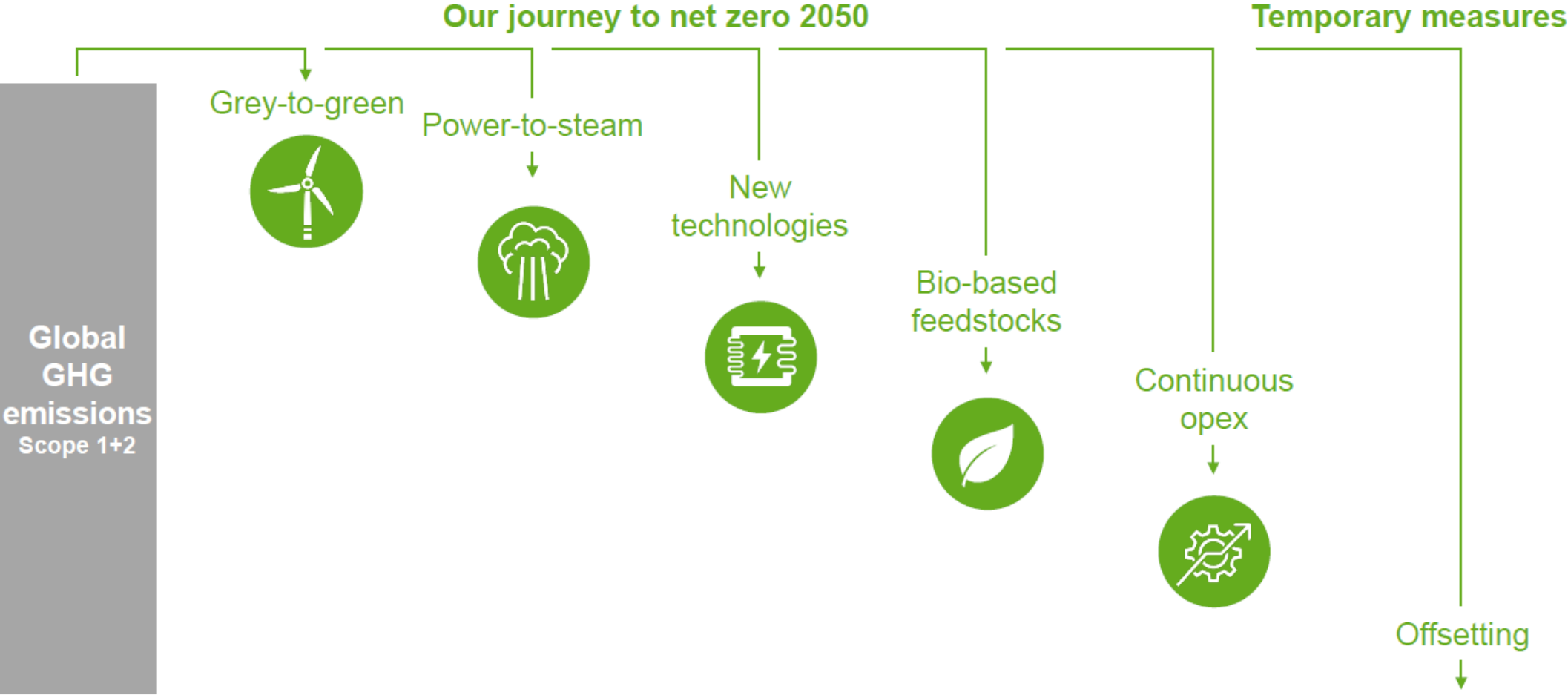
We offer approximately
100,000
Customer Innovative solutions for a sustainable future

We will have six segments, each containing two operating divisions, with the exception of Agricultural Solutions:

- Chemicals with Petrochemicals and Intermediates
- Materials with Performance Materials and Monomers
- Industrial Solutions with Dispersions & Pigments and Performance Chemicals
- Surface Technologies with Catalysts and Coatings
- Nutrition & Care with Care Chemicals and Nutrition & Health
- Agricultural Solutions

➔ **A variety of solutions will be needed for a transformation of industry**

Our levers to reduce BASF's CO₂ emissions



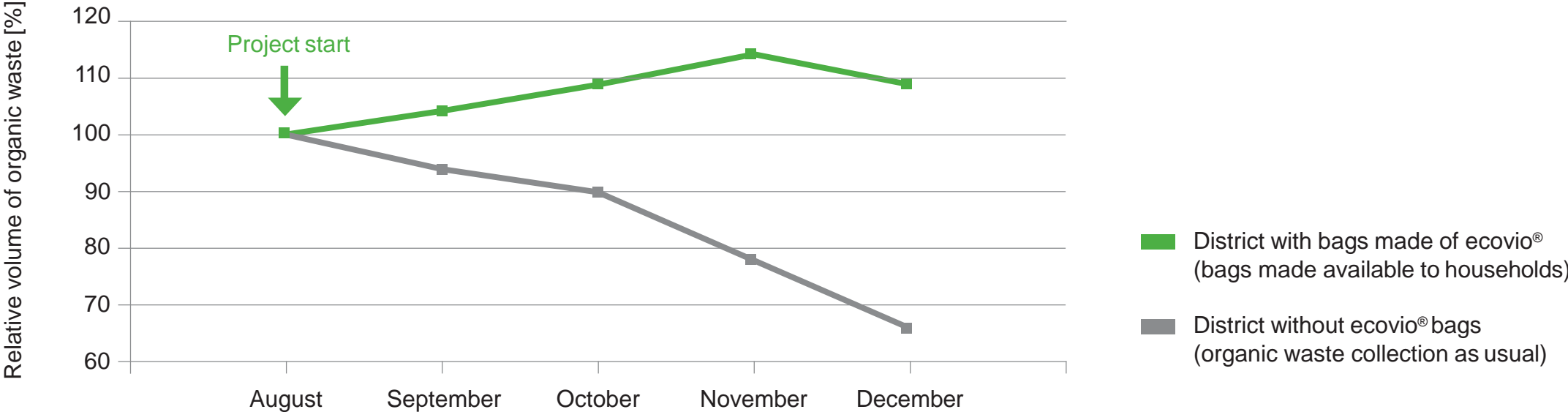
Circular Economy principles support global decarbonization



Example: How can innovations from chemical industry fuel the nutrient circle?

Seperate collection of organic waste is prerequisite Innovative materials can support us in increasing the collection!

Change in amount of collected organic waste



Studies in e.g. Berlin, Munich, Milano and Catalonia show:
Citizens collect more organic waste when bags made of ecovio® are available.

Source: Kanthak & Adam, Waste consulting office, Berlin, 2012. Distribution of ecovio® OWB to the "project districts": 11.000 households in Henszlauer Berg and 10.000 households in Hellersdorf and monitoring the amount of collected organic waste in the testing and reference areas.

How innovations from chemical industry can support climate change mitigation and prevention of persistent microplastics

Certified compostable applications

- Supporting the easier separate collection of organic waste (e.g., brewing aid, bags, soiled food packaging)
- Safeguard the compost quality by prevention of microplastics from conventional (non-compostable) plastics in organic recycling streams (e. g., bags, brewing aid, selected fruit & vegetable packaging, fruit stickers)

Value chain: Why should we care about compost?

- Soil amendments like composts are essential to close the biological cycle of circular economy to e. g.,
 - bring the nutrients back to agricultural fields,
 - secure soil fertility, and
 - Restore soil organic carbon content.
- Compost mitigates climate change! (Data from SOC (Save organics in soil))

CARBON STORED IN SOIL

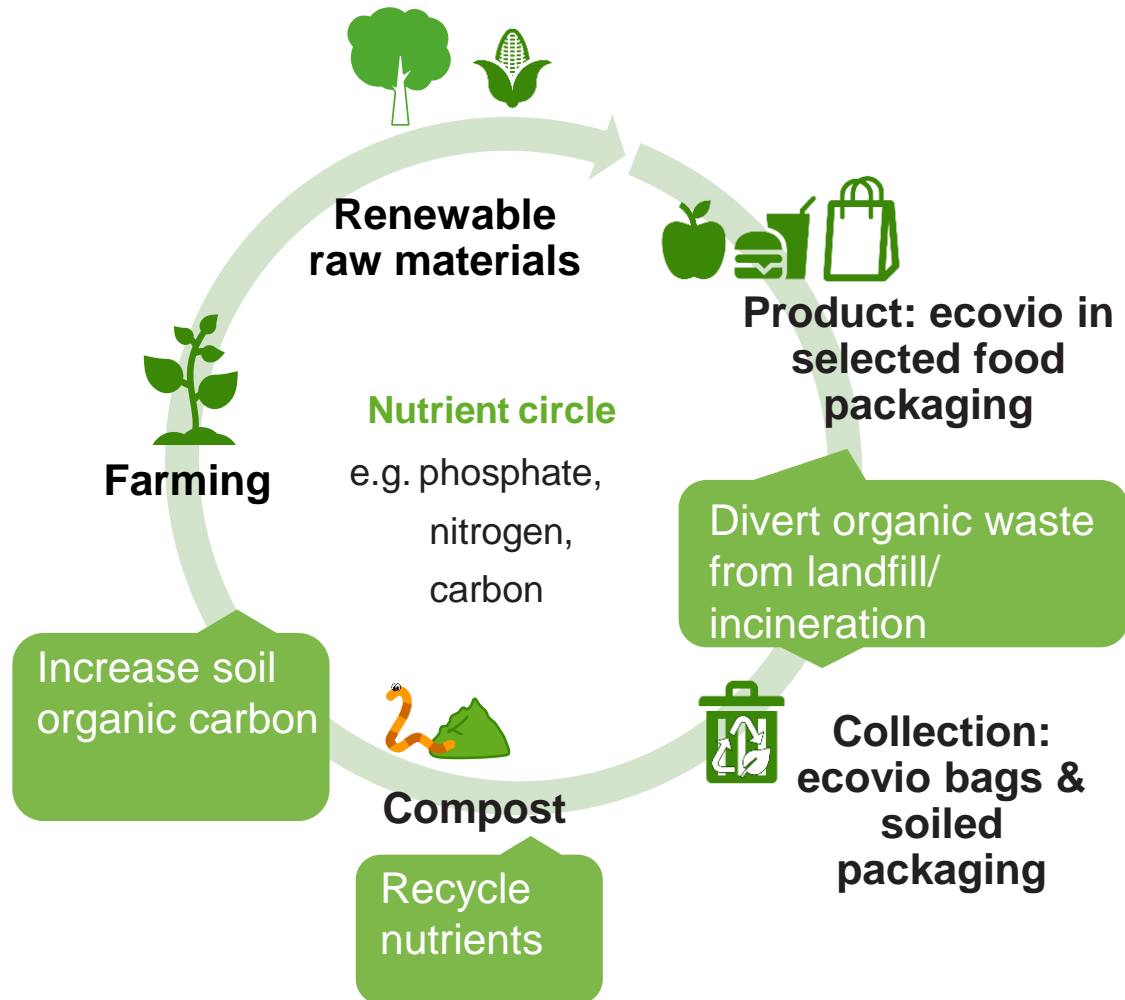
CURRENT	5 million
POTENTIAL	55 million

AVOIDED EMISSIONS AS FERTILIZER

CURRENT	4 million
POTENTIAL	43 million

tonnes of carbon dioxide equivalents every year

Conclusion



- Organics recycling is essential to:
 - ▶ Recycle the nutrients back to agricultural fields
 - ▶ Reduce global GHG emissions helping to mitigate climate change
- Smart usage of certified compostable material indeed does **increase the amount and quality of compost.**
- Teaming up with the value chain:
 - ▶ The sustainability value is in the use phase of the material within the nutrient circle



We create chemistry

Backup

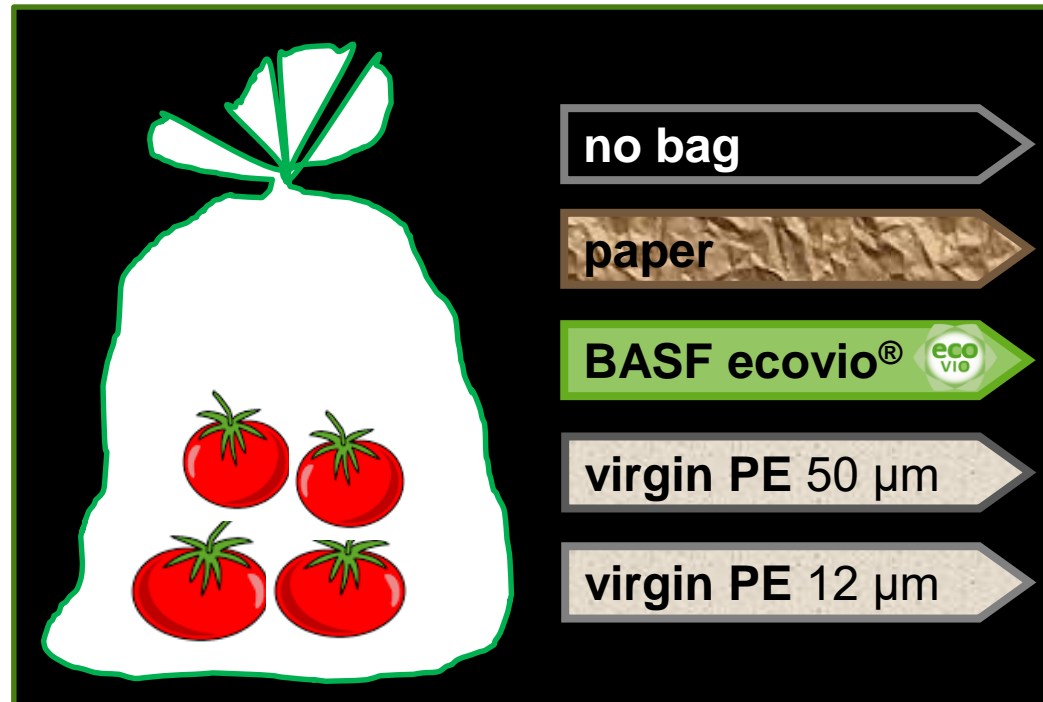
Comparative Life Cycle Assessment

Study set-up

Customer Benefit

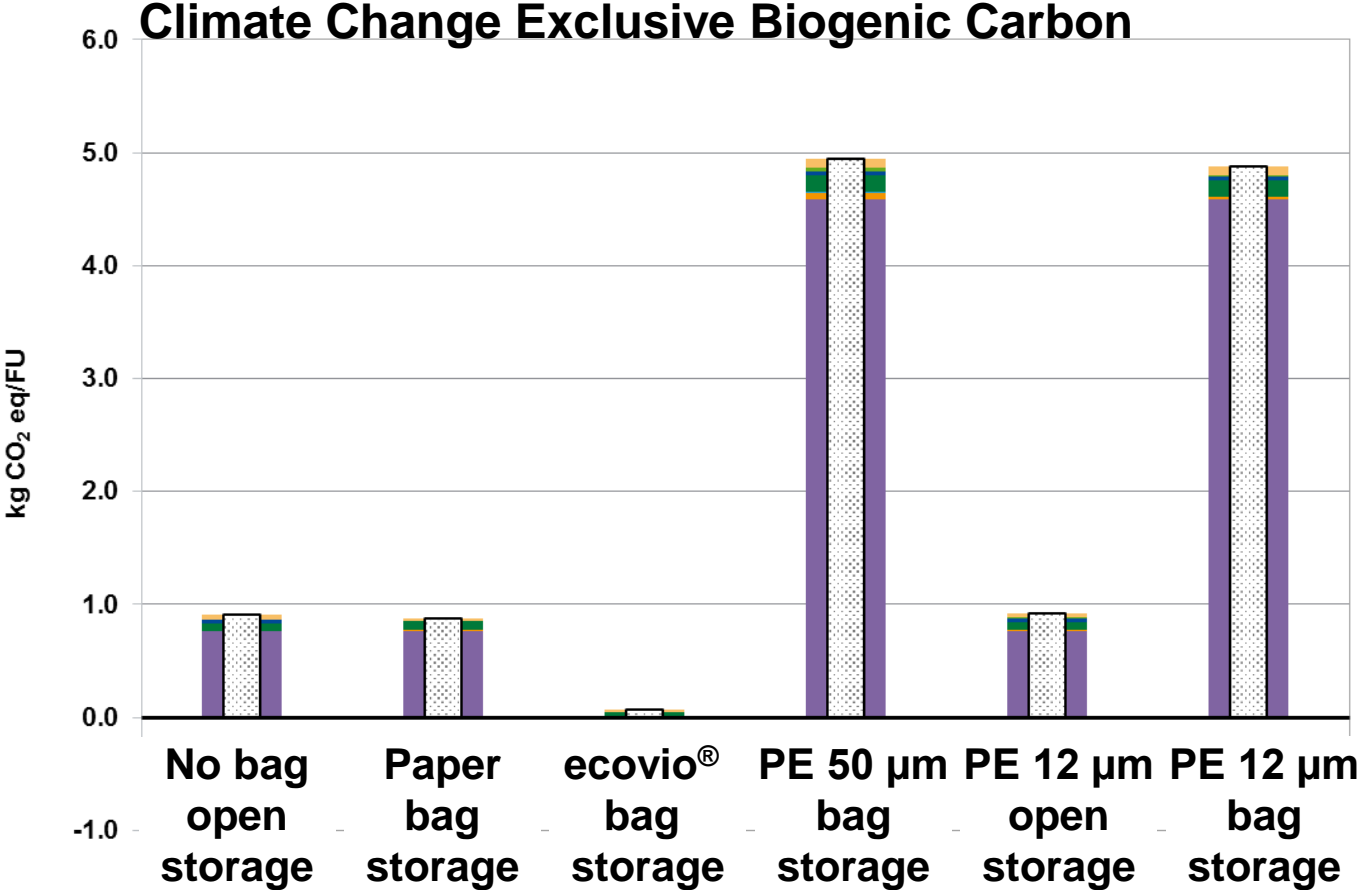
Transportation of
1,5 kg tomatoes from
supermarket to
home,
storage of food
&
disposal of 1.4 kg
food waste

Country investigated: France



Comparative Life Cycle Assessment

Example: Certified compostable fruit and vegetable bags made from ecovio®



The impact of tomato production on LCA clearly shows the resulting **environmental benefits of separate waste collection together with shelf-life extension** due to smart packaging!